Cooperative Flax Trials

in the Spring Flax Region — 1978

Agricultural Reviews and Manuals
Science and Education Administration
U.S. Department of Agriculture

ARM-NC-5
May 1979

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NORTH CENTRAL REGION, SCIENCE AND EDUCATION ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE

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Dakotas-Alaska Area		C. H. Schmidt* R. M. Heermann*

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UNIVERSITY OF SASKATCHEWAN

Crop Science Department		
Saskatoon		G. G. Rowland

AGRICULTURE CANADA

Research Station, Morden		D. G. Dorrell E. O. Kenaschuk J. A. Hoes

* SEA-AR, USDA personnel

Published by Agricultural Research (North Central Region)
Science and Education Administration, U.S. Department of Agriculture
2000 W. Pioneer Parkway
Peoria, Ill. 61615

Cooperative Flax Trials in the Spring Flax Region—1978[1]

Jerry F. Miller and James J. Hammond[2]

ACKNOWLEDGMENTS

Agronomists and plant pathologists in the United States and Canada who are interested in flax improvement have cooperated by growing the Regional Flax Nurseries from which the data in this report have been compiled. A list of the cooperating agencies and personnel is given on page 2. The writers of this report wish to express their sincere appreciation to individuals who undertook to grow one or more of these nurseries during the past 40 years.

REGIONAL VARIETAL TRIALS IN 1978

The Cooperative Regional Nursery in 1978 consisted of varieties grown in nurseries at 14 locations. The varieties included in the trials are listed in table 1, and the stations from which data were obtained are given in table 2.

This report covers agronomic, disease, and seed quality data reported from the stations in 1978. The Cooperative Regional Nursery has been grown for 40 years from 1939 to 1978, and data have been reported from a total of 1,109 trials. A total of 263 varieties or selections have been grown for 1 or more years.

All data are reported in the metric system. Several conversion factors are shown to aid in converting figures to the other system.

Conversion Factors
.0777 × g/l = lb/bu
.892 × kg/ha = lb/A
.01593 × kg/ha = bu/A

[1] Joint progress report of cooperative investigations by the State Agricultural Experiment Stations, Canadian Department of Agriculture, Canadian Province Universities, and the U.S. Department of Agriculture that contains preliminary data, interpretation of which may be modified by additional experimentation.

[2] Research geneticist, Science and Education Administration, Agricultural Research, U.S. Department of Agriculture; and associate professor, Department of Agronomy; North Dakota State University, State University Station, Fargo, N.D. 58105.

TABLE 1.—VARIETIES OF FLAX GROWN IN COOPERATIVE REGIONAL NURSERIES IN 1978

VARIETY OR CROSS	C.I. NUMBER	SOURCE	YEAR ENTERED
BISON(CHECK)	389	NORTH DAKOTA	1927
NORED(CHECK)	2292	MINNESOTA	1962
LINOTT(CHECK)	2522	OTTAWA,ONT.	1967
CULBERT	2776	MINNESOTA	1972
DUFFERIN(REDWOOD 65 X FP 441)	2814	MANITOBA	1975
LINOTT/NORED	2840	NORTH DAKOTA	1976
CI1220Y/FOSTER	2847	NORTH DAKOTA	1976
N617 LINDA/FOSTER	2851	NORTH DAKOTA	1977
N618 LINDA/FOSTER	2852	NORTH DAKOTA	1977
N619 LINDA/FOSTER	2853	NORTH DAKOTA	1977
N623 CI1220B/B5128//CI2481/B5128	2854	NORTH DAKOTA	1977
N625 LINDA/FOSTER	2855	NORTH DAKOTA	1977
N705 LINOTT/NORED	2886	NORTH DAKOTA	1978
N713 LINOTT/CI2538	2887	NORTH DAKOTA	1978
N714 LINOTT/CI2538	2888	NORTH DAKOTA	1978
N715 LINOTT/CI2538	2889	NORTH DAKOTA	1978
M714 WR302 CI191IP4/HIOIL	2890	MINNESOTA	1978
M716 WR305 CI191IP4/HIOIL	2891	MINNESOTA	1978
M717 WR310 CI191IP4/HIOIL	2892	MINNESOTA	1978
M724 WR408 CI2008M6/HIOIL	2893	MINNESOTA	1978
92 LINOTT/BIS M3//LINOTT/BIS P3	2894	NORTH DAKOTA	1978
181 LINOTT/BIS M3//LINOTT/BIS P3	2895	NORTH DAKOTA	1978
704 LINOTT/BIS M3//LINOTT/BIS P3	2896	NORTH DAKOTA	1978
1067 LINOTT/BIS M3//LINOTT/BIS P3	2897	NORTH DAKOTA	1978
B5128 SELECTION 75	2898	NORTH DAKOTA	1978
ADDITIONAL VARIETIES**********			
NORSTAR	2290	MINNESOTA	1962

TABLE 2.—AVERAGE YIELDS OF SEED, LEAST SIGNIFICANT DIFFERENCES, AND PAGE NUMBERS OF DATA TABLES FROM COOPERATING STATIONS IN 1978

Station	Avg. yield kg/ha	LSD (.05) kg	LSD (.05) Percent	Page No. of table
Minnesota				
Lamberton (early)	2005	196	10	3
Lamberton (late)	1347	390	29	3
Morris (early)	1691	198	12	4
Morris (late)	1799	285	16	4
Crookston (early)	1596	218	14	4
Stephen (early)	1498	213	14	5
South Dakota				
Brookings (early)	1944	371	19	5
Brookings (late)	807	753	93	5
Brown Co. (early)	1229	334	27	6
North Dakota				
Carrington (early)	1151	360	31	6
Fargo (early)	1408	239	17	6
Fargo (late)	501	267	53	7
Minot (early)	1398	431	31	7
Manitoba				
Morden (early)	1387	239	17	7
Morden (late)	1227	191	16	8
Portage (early)	1800	339	19	8
Portage (late)	1595	255	16	8
Winnipeg (early)	1753	375	21	9
Montana				
Sidney (early)	949	164	17	9
Saskatchewan				
Saskatoon (early)	606	134	22	9

LEAST SIGNIFICANT DIFFERENCE

Plot size and number of replications of the different tests varied, but most plats were near 5 m long with three replications. Least significant differences at the 5 percent point have been calculated for all stations. Average seed yields of the various tests, together with the least significant differences calculated both in kilograms and in percent of the mean are shown in table 2.

Agronomic data from 20 nurseries by 14 stations are shown in table 3. Varieties are listed in systematic order with a column indicating yield rank. Included with the experimental varieties were four check varieties (Bison, Nored, Linott, and Culbert). Additional varieties were included at a number of stations. In table 5 the comparative yield of all varieties at all stations is shown as percent of checks.

TABLE 3.—YIELD AND OTHER DATA FOR FLAX VARIETIES AND SELECTIONS GROWN IN REGIONAL TRIALS IN 1978 AT DIFFERENT LOCATIONS

ST. PAUL, MINNESOTA (EARLY) SEEDED 5/ 7 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	35	47			58	3							1		
2292	15	48			63	1							1		
2522	11	44			60	1							1		
2776	6	43			58	1							1		
2814	3	49			62	1							1		
2840	3	48			64	1							1		
2847	3	47			60	1							1		
2851	2	49			58	1							1		
2852	2	48			58	1							1		
2853	2	46			56	1							1		
2854	2	48			61	1							1		
2855	2	47			60	2							1		
2886	1	46			64	1							1		
2887	1	43			57	2							1		
2888	1	45			57	1							1		
2889	1	43			56	1							1		
2890	1	46			64	1							1		
2891	1	46			63	1							1		
2892	1	46			63	1							1		
2893	1	44			59	2							1		
2894	1	45			56	2							1		
2895	1	46			54	2							1		
2896	1	46			55	2							1		
2897	1	45			58	2							1		
2898	1	51			64	1							1		
2290	1	48			60	1									

STATION AVERAGE 0 KG PER HECTARE;LSD(.05) = 0 KG/HA. ; F = 0.0

LAMBERTON, MINNESOTA (EARLY) SEEDED 5/ 2 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	16	45			56								14	2029	102
2292	16	47			56								25	1684	85
2522	9	43			57								8	2105	106
2776	7	43			55								5	2136	107
2814	4	47			54								7	2125	107
2840	3	48			60								24	1720	86
2847	3	46			59								17	1966	99
2851	2	48			55								18	1957	98
2852	2	47			52								12	2044	103
2853	2	45			60								10	2055	103
2854	2	45			61								13	2031	102
2855	2	46			54								16	1984	100
2886	1	44			59								21	1879	94
2887	1	43			57								1	2288	115
2888	1	44			53								11	2046	103
2889	1	42			52								9	2060	104
2890	1	46			61								22	1796	90
2891	1	46			60								19	1906	96
2892	1	45			56								20	1885	95
2893	1	46			57								15	2015	101
2894	1	45			52								2	2252	113
2895	1	45			53								3	2147	108
2896	1	46			52								4	2140	108
2897	1	44			57								6	2131	107
2898	1	48			57								23	1760	89
2290	16	45			61									1977	

STATION AVERAGE 2005 KG PER HECTARE;LSD(.05) = 196 KG/HA. ; F = 4.7987

LAMBERTON, MINNESOTA (LATE) SEEDED 6/ 5 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	12	41			71	6							24	798	62
2292	12	47			78	4							19	1127	88
2522	9	38			65	4							3	1695	132
2776	5	40			67	3							9	1519	118
2814	2	49			76	5							23	906	71
2840	1	44			72	4							15	1335	104
2847	1	45			74	4							21	1055	82
2851	1	44			79	4							14	1353	105
2852	1	44			69	6							16	1272	99
2853	1	40			74	5							18	1208	94
2854	1	43			74	4							19	1127	88
2855	1	46			76	5							22	1026	80
2886	1	41			71	5							6	1601	125
2887	1	38			66	4							1	1847	144
2888	1	40			68	3							7	1595	124
2889	1	37			62	4							5	1637	127
2890	1	41			77	4							11	1449	113
2891	1	41			73	4							13	1393	108
2892	1	41			69	4							8	1552	121
2893	1	41			70	4							16	1272	99
2894	1	39			66	4							12	1442	112
2895	1	38			68	4							10	1458	113
2896	1	40			67	4							2	1762	137
2897	1	39			68	4							4	1686	131
2898	1	49			80	6							25	565	44
2290	11	46			79	4								1324	

STATION AVERAGE 1347 KG PER HECTARE;LSD(.05) = 390 KG/HA. ; F = 5.0342

TABLE 3 (CONTINUED)

MORRIS, MINNESOTA (EARLY) SEEDED 5/15 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODG	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	38	43	49		72	5							25	1429	89
2292	16	48	52		73	1							10	1742	109
2522	11	42	45		62	3							13	1677	105
2776	6	42	47		62	2							21	1570	98
2814	3	48	53		72	2							2	1814	113
2840	2	45	51		74	1							24	1467	91
2847	2	44	50		69	1							19	1604	100
2851	2	46	52		74	1							17	1642	102
2852	2	44	49		60	3							23	1487	93
2853	2	42	46		68	1							18	1630	102
2854	2	42	48		71	1							20	1579	98
2855	2	44	51		78	2							3	1807	113
2886	1	41	47		73	2							8	1774	111
2887	1	40	44		63	4							9	1758	110
2888	1	40	45		75	2							7	1780	111
2889	1	39	43		64	1							3	1807	113
2890	1	42	47		74	1							5	1803	112
2891	1	43	49		70	3							13	1677	105
2892	1	42	45		66	2							22	1521	95
2893	1	42	47		66	2							16	1651	103
2894	1	42	47		62	2							15	1655	103
2895	1	42	46		61	2							12	1722	107
2896	1	44	48		63	3							1	1852	115
2897	1	42	46		63	3							6	1798	112
2898	1	48	53		78	1							11	1727	108
2290	16	44	50		76	1								1984	

STATION AVERAGE 1691 KG PER HECTARE;LSD(.05) = 198 KG/HA. ; F = 3.5488

MORRIS, MINNESOTA (LATE) SEEDED 6/ 5 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODG	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	24	43	47										22	1588	87
2292	15	47	52										15	1771	98
2522	11	41	44										8	1995	110
2776	6	42	46										10	1908	105
2814	3	50	57										19	1615	89
2840	2	44	54										20	1612	89
2847	2	44	53										24	1293	71
2851	2	48	53										17	1664	92
2852	2	43	51										23	1465	81
2853	2	42	48										18	1619	89
2854	2	43	52										14	1807	100
2855	2	43	54										21	1597	88
2886	1	42	47										13	1881	104
2887	1	41	44										3	2114	116
2888	1	42	47										2	2161	119
2889	1	40	44										1	2288	126
2890	1	44	49										11	1899	105
2891	1	42	49										16	1702	94
2892	1	42	47										5	2031	112
2893	1	41	46										12	1888	104
2894	1	42	46										9	1935	107
2895	1	41	45										4	2044	113
2896	1	43	46										6	2004	110
2897	1	42	46										6	2004	110
2898	1	53	62										25	932	51

STATION AVERAGE 1799 KG PER HECTARE;LSD(.05) = 285 KG/HA. ; F = 8.3107

CROOKSTON, MINNESOTA (EARLY) SEEDED 5/ 2 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODG	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	38		58	105	53								18	1532	97
2292	16		58	105	53								10	1604	102
2522	11		55	104	43								24	1447	92
2776	7		54	102	49								6	1729	110
2814	4		60	106	52								1	1769	112
2840	4		59	107	56								11	1581	100
2847	4		57	108	55								9	1624	103
2851	2		58	106	54								13	1563	99
2852	2		57	106	47								21	1478	94
2853	2		56	105	51								20	1525	97
2854	2		56	104	47								23	1456	92
2855	2		57	104	49								7	1700	108
2886	1		56	108	56								2	1762	112
2887	1		54	101	58								12	1570	99
2888	1		54	101	49								4	1733	110
2889	1		52	103	46								13	1563	99
2890	1		58	106	57								25	1375	87
2891	1		57	104	54								19	1527	97
2892	1		56	106	53								22	1467	93
2893	1		56	104	51								8	1635	104
2894	1		54	101	55								16	1545	98
2895	1		57	103	47								16	1545	98
2896	1		55	103	50								4	1733	110
2897	1		55	102	47								15	1550	98
2898	1		58	107	56								3	1744	111
2290	16		57	105	56									1731	

STATION AVERAGE 1596 KG PER HECTARE;LSD(.05) = 218 KG/HA. ; F = 2.0901

TABLE 3 (CONTINUED)

STEPHEN, MINNESOTA (EARLY) SEEDED 5/ 2 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	2		56		57								22	1375	93
2292	2		60		52								18	1463	99
2522	2		54		47								5	1595	107
2776	2		56		49								15	1505	101
2814	2		59		51								1	1753	118
2840	2		59		60								17	1474	99
2847	2		56		53								13	1514	102
2851	2		56		52								4	1644	111
2852	2		55		47								19	1447	97
2853	2		55		51								21	1420	96
2854	2		55		48								25	1252	84
2855	2		57		55								9	1541	104
2886	1		55		55								16	1492	101
2887	1		54		54								12	1525	103
2888	1		54		49								10	1532	103
2889	1		54		46								24	1308	88
2890	1		56		61								20	1438	97
2891	1		59		54								6	1568	106
2892	1		56		54								23	1348	91
2894	1		55		50								8	1550	104
2895	1		55		47								13	1514	102
2896	1		58		50								2	1682	113
2897	1		55		47								7	1557	105
2898	1		59		62								10	1532	103
2290	1		58		57									1219	

STATION AVERAGE 1498 KG PER HECTARE; LSD(.05) = 213 KG/HA. ; F = 2.8464

BROOKINGS, SOUTH DAKOTA (EARLY) SEEDED 5/ 2 HARVESTED 1.95299911 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	39	50			60	4							24	1669	89
2292	17	50			62	3							12	1967	105
2522	12	50			59	4							19	1831	98
2776	7	48			55	3							8	2044	109
2814	4	51			58	7							14	1942	103
2840	3	52			65	3							17	1845	98
2847	3	50			61	3							20	1816	97
2851	2	51			63	5							22	1739	93
2852	2	51			56	5							25	1662	89
2853	2	50			58	3							23	1725	92
2854	2	51			61	3							13	1950	104
2855	2	50			60	4							3	2167	115
2886	1	52			64	4							16	1867	99
2887	1	48			63	4							15	1923	102
2888	1	49			58	3							5	2111	112
2889	1	48			53	2							2	2189	117
2890	1	50			63	3							18	1833	98
2891	1	51			64	2							11	1976	105
2892	1	50			63	2							7	2092	111
2893	1	51			62	3							10	2002	107
2894	1	51			59	5							4	2165	115
2895	1	49			63	2							1	2196	117
2896	1	52			57	4							6	2104	112
2897	1	50			57	4							21	1744	93
2898	1	51			63	6							9	2041	109

STATION AVERAGE 1944 KG PER HECTARE; LSD(.05) = 371 KG/HA. ; F = 1.6064

BROOKINGS, SOUTH DAKOTA (LATE) SEEDED 6/19 HARVESTED 1.73599911 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	37				68								11	846	108
2292	15				62								23	408	52
2522	10				65								9	933	119
2776	5				63								7	950	121
2814	2				67								24	397	51
2840	2				72								19	668	85
2847	2				66								22	577	74
2851	2				66								21	602	77
2852	2				57								17	702	90
2853	2				66								12	829	106
2854	2				67								20	627	80
2855	2				67								1	1781	227
2886	1				67								18	700	89
2887	1				65								3	1011	129
2888	1				63								10	931	119
2889	1				60								3	1011	129
2890	1				67								13	777	99
2891	1				67								14	748	95
2892	1				62								15	733	93
2893	1				66								16	731	93
2894	1				62								8	937	119
2895	1				64								2	1105	141
2896	1				57								5	998	127
2897	1				62								6	973	124
2898	1				73								25	222	28

STATION AVERAGE 807 KG PER HECTARE; LSD(.05) = 753 KG/HA. ; F = 1.2369

TABLE 3 (CONTINUED)

BROWN CO.SOUTH DAKOTA (EARLY) SEEDED 5/16 HARVESTED 1.48799992 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODG	WT TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	2				65						24	916	71
2292	2				64						9	1321	103
2522	2				67						1	1630	127
2776	2				60						13	1263	98
2814	2				69						5	1413	110
2840	1				65						18	1133	88
2847	1				67						10	1294	101
2851	1				67						16	1182	92
2852	1				63						15	1211	94
2853	1				66						4	1467	114
2854	1				69						23	943	74
2855	1				70						21	1106	86
2886	1				68						19	1131	88
2887	1				65						6	1384	108
2888	1				66						2	1590	124
2889	1				60						14	1216	95
2890	1				66						19	1131	88
2891	1				71						22	963	75
2892	1				67						11	1285	100
2893	1				64						17	1151	90
2894	1				62						12	1274	99
2895	1				66						7	1357	106
2896	1				58						3	1474	115
2897	1				62						8	1335	104
2898	1				71						25	544	42

STATION AVERAGE 1229 KG PER HECTARE:LSD(.05) = 334 KG/HA. ; F = 3.8333

CARRINGTON.NORTH DAKOTA (EARLY) SEEDED 5/11 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODG	WT TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	14										20	1041	88
2292	13										2	1437	122
2522	10										17	1075	91
2776	5										11	1164	99
2814	3										6	1231	104
2840	2										3	1436	122
2847	2										4	1278	108
2851	1										22	986	84
2852	1										24	947	80
2853	1										10	1171	99
2854	1										12	1156	98
2855	1										7	1223	104
2886	1										15	1122	95
2887	1										5	1249	106
2888	1										19	1048	89
2889	1										14	1139	97
2890	1										23	958	81
2891	1										25	838	71
2892	1										9	1203	102
2893	1										16	1095	93
2894	1										18	1072	91
2895	1										21	1040	88
2896	1										8	1221	104
2897	1										13	1140	97
2898	1										1	1493	127

STATION AVERAGE 1151 KG PER HECTARE:LSD(.05) = 360 KG/HA. ; F = 1.4901

FARGO.NORTH DAKOTA (EARLY) SEEDED 5/10 HARVESTED 5.95999908 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODG	WT TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	37	44			75						20	1249	77
2292	15	47			84						1	2034	125
2522	11	42			76						7	1563	96
2776	6	42			70						3	1684	103
2814	4	47			80						17	1273	78
2840	3	45			81						10	1469	90
2847	3	45			75						19	1252	77
2851	2	47			79						22	1182	72
2852	2	45			69						25	885	54
2853	2	44			72						23	1166	71
2854	2	44			79						4	1657	102
2855	2	45			81						15	1343	82
2886	1	43			81						12	1453	89
2887	1	42			72						2	1768	108
2888	1	43			76						11	1463	90
2889	1	41			69						6	1568	96
2890	1	44			75						8	1528	94
2891	1	44			81						9	1501	92
2892	1	44			73						14	1372	84
2893	1	44			74						13	1417	87
2894	1	44			72						5	1635	100
2895	1	43			72						16	1292	79
2896	1	45			66						21	1241	76
2897	1	43			70						18	1254	77
2898	1	46			85						24	932	57

STATION AVERAGE 1408 KG PER HECTARE:LSD(.05) = 239 KG/HA. ; F = 8.9413

TABLE 3 (CONTINUED)

FARGO,NORTH DAKOTA (LATE) SEEDED 6/27 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	37												18	374	81
2292	15												22	216	47
2522	10												10	580	126
2776	6												5	674	146
2814	3												24	171	37
2840	3												12	511	111
2847	3												19	352	76
2851	2												21	234	51
2852	2												13	493	107
2853	2												17	436	95
2854	2												16	437	95
2855	2												23	209	45
2886	1												7	652	141
2887	1												1	937	203
2888	1												4	716	155
2889	1												15	466	101
2890	1												20	345	75
2891	1												14	491	107
2892	1												2	922	200
2893	1												11	513	111
2894	1												3	761	165
2895	1												8	629	136
2896	1												6	656	142
2897	1												9	614	133
2898	1												25	122	26

STATION AVERAGE 501 KG PER HECTARE;LSD(.05) = 267 KG/HA. ; F = 5.3963

MINOT,NORTH DAKOTA (EARLY) SEEDED 0/ 0 HARVESTED 1.48999977 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	23				65	1							21	1290	91
2292	15				65								3	1620	114
2522	9				63	1							16	1384	97
2776	6				60	1							14	1404	99
2814	3				68								9	1451	102
2840	2				68								17	1365	96
2847	2				65								9	1451	102
2851	2				65								6	1523	107
2852	2				60								19	1340	94
2853	2				70								4	1614	113
2854	2				70								2	1661	117
2855	2				68								1	1684	118
2886	1				68								12	1421	100
2887	1				65	2							13	1412	99
2888	1				63	1							22	1199	84
2889	1				58	1							20	1335	94
2890	1				68								15	1390	98
2891	1				68	1							25	859	60
2892	1				68	1							24	1109	78
2893	1				65								23	1129	79
2894	1				63	2							8	1459	102
2895	1				63								5	1558	109
2896	1				63	1							18	1359	95
2897	1				63	2							11	1447	102
2898	1				70								7	1473	103

STATION AVERAGE 1398 KG PER HECTARE;LSD(.05) = 431 KG/HA. ; F = 1.4587

MORDEN,MANITOBA (EARLY) SEEDED 5/22 HARVESTED 2.96999931 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	DAYS FROM SOWING TO MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	34		90		58	2							9	1466	99
2292	13		96		61	1							22	1234	83
2522	9		95		56	3							1	1750	118
2776	7		90		55	3							7	1494	101
2814	4		98		60	1							18	1284	86
2840	3		95		60	3							19	1261	85
2847	3		97		57	1							23	1148	77
2851	2		91		60	1							24	1126	76
2852	2		90		50	3							21	1239	83
2853	2		93		56	1							10	1443	97
2854	2		93		57	6							14	1337	90
2855	2		99		59	1							15	1307	88
2886	1		93		59	2							16	1292	87
2887	1		92		54	3							3	1610	108
2888	1		91		58	3							6	1501	101
2889	1		92		49	3							5	1558	105
2890	1		92		59	2							20	1254	84
2891	1		97		62	2							13	1377	93
2892	1		92		56	3							12	1397	94
2893	1		92		57	2							16	1292	87
2894	1		91		56	2							4	1587	107
2895	1		94		55	2							2	1711	115
2896	1		90		52	2							8	1478	99
2897	1		88		53	3							11	1434	97
2898	1		99		61	1							25	1075	72

STATION AVERAGE 1387 KG PER HECTARE;LSD(.05) = 239 KG/HA. ; F = 4.3023

TABLE 3 (CONTINUED)

MORDEN, MANITOBA (LATE) SEEDED 6/ 6 HARVESTED 2.96999931 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	18		95		62								16	1180	97
2292	13		104		63								24	978	80
2522	9		96		58								1	1475	121
2776	7		98		61								13	1238	102
2814	4		104		62								8	1301	107
2840	3		101		61								17	1178	97
2847	3		102		62								22	1071	88
2851	2		102		63								21	1109	91
2852	2		93		56								10	1255	103
2853	2		96		60								6	1351	111
2854	2		101		61								23	1070	88
2855	2		103		61								20	1129	93
2886	1		99		62								19	1143	94
2887	1		91		51								9	1271	104
2888	1		96		59								14	1220	100
2889	1		92		54								4	1379	113
2890	1		99		65								15	1202	99
2891	1		101		65								18	1161	95
2892	1		93		58								12	1243	102
2893	1		94		60								7	1338	110
2894	1		93		62								11	1246	102
2895	1		92		58								5	1361	112
2896	1		93		56								3	1425	117
2897	1		92		57								2	1474	121
2898	1		104		63								25	871	72

STATION AVERAGE 1227 KG PER HECTARE;LSD(.05) = 191 KG/HA. ; F = 4.6902

PORTAGE, MANITOBA (EARLY) SEEDED 5/ 7 HARVESTED 4.34999943 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	4		108		67								24	1389	77
2292	4		109		72								9	1878	105
2522	4		109		62								5	1970	110
2776	4		112		57								6	1948	108
2814	4		108		70								3	2059	115
2840	3		109		67								7	1939	108
2847	3		112		66								10	1863	104
2851	2		107		71								19	1746	97
2852	2		108		57								23	1448	81
2853	2		110		66								12	1805	100
2854	2		108		60								17	1764	98
2855	2		110		67								18	1749	97
2886	1		108		72								14	1801	100
2887	1		106		61								21	1693	94
2888	1		107		66								1	2159	120
2889	1		107		57								4	1981	110
2890	1		109		69								22	1580	88
2891	1		111		72								16	1771	99
2892	1		107		61								15	1795	100
2893	1		108		63								20	1697	94
2894	1		106		62								8	1909	106
2895	1		109		62								11	1855	103
2896	1		108		59								2	2114	118
2897	1		107		61								13	1802	100
2898	1		109		68								25	1261	70

STATION AVERAGE 1800 KG PER HECTARE;LSD(.05) = 339 KG/HA. ; F = 3.1274

PORTAGE, MANITOBA (LATE) SEEDED 6/ 5 HARVESTED 4.34999943 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	4		110		69								14	1515	91
2292	4		116		67								22	1220	73
2522	4		104		63								7	1904	114
2776	4		108		59								3	2047	122
2814	4		115		71								20	1299	78
2840	3		109		68								19	1321	79
2847	3		116		71								18	1372	82
2851	2		115		72								24	1086	65
2852	2		107		60								10	1699	102
2853	2		111		70								15	1489	89
2854	2		108		64								16	1447	87
2855	2		115		70								23	1216	73
2886	1		111		69								17	1385	83
2887	1		102		60								1	2129	127
2888	1		108		70								6	1951	117
2889	1		102		60								2	2108	126
2890	1		112		72								13	1545	92
2891	1		116		68								21	1290	77
2892	1		104		63								11	1685	101
2893	1		104		66								8	1770	106
2894	1		107		63								9	1768	106
2895	1		103		63								4	1997	119
2896	1		104		63								12	1679	100
2897	1		104		64								5	1968	118
2898	1		117		71								25	966	58

STATION AVERAGE 1595 KG PER HECTARE;LSD(.05) = 255 KG/HA. ; F = 13.7088

TABLE 3 (CONTINUED)

WINNIPEG, MANITOBA (EARLY) SEEDED 5/ 5 HARVESTED 3.05999947 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	26	48	55	114	56								16	1707	106
2292	12	50	56	115	56								12	1744	109
2522	9	45	52	110	51								22	1515	94
2776	7	45	52	110	49								23	1454	91
2814	4	51	56	115	54								5	1883	117
2840	3	51	56	115	58								3	2017	126
2847	3	46	52	110	55								6	1874	117
2851	2	49	55	115	58								4	1948	121
2852	2	48	54	115	48								23	1454	91
2853	2	47	54	115	51								18	1658	103
2854	2	48	55	115	52								10	1805	112
2855	2	48	55	115	51								2	2058	128
2886	1	45	52	110	59								10	1805	112
2887	1	45	52	110	50								21	1552	97
2888	1	45	52	110	51								17	1691	105
2889	1	45	52	110	52								25	1421	89
2890	1	48	55	115	56								12	1744	109
2891	1	48	55	115	60								7	1821	113
2892	1	49	55	115	51								19	1650	103
2893	1	48	55	115	53								8	1813	113
2894	1	48	55	115	48								12	1744	109
2895	1	48	55	115	50								8	1813	113
2896	1	49	56	115	47								15	1727	108
2897	1	48	55	115	50								20	1646	103
2898	1	51	58	115	52								1	2258	141

STATION AVERAGE 1753 KG PER HECTARE;LSD(.05) = 375 KG/HA. ; F = 2.2009

SIDNEY (EARLY) SEEDED 5/23 HARVESTED 2.96999931 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	3	47			62				66		38.5		12	946	93
2292	3	53			68				66		38.9		9	976	96
2522	3	47			63				66		39.0		5	1019	100
2776	3	47			59				66		40.0		1	1136	111
2814	3	55			67				66		38.9		22	877	86
2840	3	51			65				66		38.3		18	903	89
2847	3	51			67				66		38.3		15	913	90
2851	2	53			69				65		39.2		19	897	88
2852	2	49			62				65		38.9		8	996	98
2853	2	48			65				64		38.8		10	958	94
2854	2	51			65				65		38.7		23	872	86
2855	2	52			65				66		38.5		24	840	82
2886	1	48			63				66		38.1		20	892	88
2887	1	47			61				67		38.3		2	1114	109
2888	1	49			63				66		38.6		7	999	98
2889	1	47			58				65		39.2		3	1069	105
2890	1	48			68				65		40.0		13	934	92
2891	1	48			70				65		40.7		17	907	89
2892	1	47			65				65		40.0		11	957	94
2893	1	48			63				65		39.9		4	1060	104
2894	1	48			62				65		39.0		21	888	87
2895	1	49			60				65		39.0		14	920	90
2896	1	47			59				66		38.2		16	911	89
2897	1	47			59				66		39.2		6	1014	99
2898	1	57			72				65		38.2		25	722	71

STATION AVERAGE 949 KG PER HECTARE;LSD(.05) = 164 KG/HA. ; F = 2.4122

SASKATOON, (EARLY) SEEDED 5/18 HARVESTED 5.19999981 SQUARE METERS

CI NUMBER	YEARS GROWN	DAYS FROM SOWING TO FIRST BLOOM	DAYS FROM SOWING TO FULL BLOOM	MATURITY	HEIGHT CM	LODGING	WILT	WILT	TEST WT G/L	1000 SEED WT GMS	OIL %	IODINE VALUE	YIELD RANK	YIELD KG PER HA	YIELD % CHECKS
389	35		56	111	44					5.6			25	512	86
2292	11		60	109	44					5.4			4	664	112
2522	8		53	115	43					5.5			22	531	90
2776	5		49	115	41					5.8			4	664	112
2814	4		61	103	46					5.6			6	660	111
2840	3		58	110	43					5.3			7	639	108
2847	3		58	116	42					5.7			11	612	103
2851	2		59	107	40					4.9			21	545	92
2852	2		59	107	36					4.9			14	601	101
2853	2		54	105	42					5.3			20	562	95
2854	2		56	105	40					5.5			19	587	99
2855	2		61	104	44					5.7			15	599	101
2886	1		55	110	44					5.2			11	612	103
2887	1		53	111	44					5.5			16	597	101
2888	1		56	107	46					5.6			2	669	113
2889	1		50	108	40					5.5			24	522	88
2890	1		57	102	45					5.4			8	638	108
2891	1		55	107	48					5.6			3	665	112
2892	1		53	108	44					5.1			13	605	102
2893	1		53	104	42					5.1			17	593	100
2894	1		53	108	41					5.4			10	626	106
2895	1		54	107	43					5.1			9	635	107
2896	1		54	111	40					5.2			17	593	100
2897	1		53	112	42					5.1			23	524	88
2898	1		64	113	42					5.6			1	676	114

STATION AVERAGE 606 KG PER HECTARE;LSD(.05) = 134 KG/HA. ; F = 1.1169

TABLE 4.—SUMMARY OF SEED YIELD IN KILOGRAMS PER HECTARE FOR FLAX LINES GROWN IN COOPERATIVE REGIONAL NURSERIES IN 1978

CI NO	OVERALL RANK EARLY	LATE	TOTAL	LAMBERTON EARLY	LATE	MORRIS EARLY	LATE	CROOKSTON EARLY	BROOKINGS EARLY	LATE	BROWN CO EARLY	CARRINGTON EARLY	FARGO EARLY	LATE
389	24	20	24	2029	798	1429	1588	1532	1669	846	916	1041	1249	374
2292	5	22	16	1684	1127	1742	1771	1604	1967	408	1321	1437	2034	216
2522	10	5	5	2105	1695	1677	1995	1447	1831	933	1630	1075	1563	580
2776	8	8	7	2136	1519	1570	1908	1729	2044	950	1263	1164	1684	674
2814	2	24	14	2125	906	1814	1615	1769	1942	397	1413	1231	1273	171
2840	14	18	17	1720	1335	1467	1612	1581	1845	668	1133	1436	1469	511
2847	16	22	21	1966	1055	1604	1293	1624	1816	577	1294	1278	1252	352
2851	20	21	22	1957	1353	1642	1664	1563	1739	602	1182	986	1182	234
2852	25	16	23	2044	1272	1487	1465	1478	1662	702	1211	947	885	493
2853	17	15	15	2055	1208	1630	1619	1525	1725	829	1467	1171	1166	436
2854	18	19	19	2031	1127	1579	1807	1456	1950	627	943	1156	1657	437
2855	9	14	10	1984	1026	1807	1597	1700	2167	1781	1106	1223	1343	209
2886	13	12	13	1879	1601	1774	1881	1762	1867	700	1131	1122	1453	652
2887	4	1	1	2288	1847	1758	2114	1570	1923	1011	1384	1249	1768	937
2888	3	6	3	2046	1595	1780	2161	1733	2111	931	1590	1048	1463	716
2889	11	2	6	2060	1637	1807	2288	1563	2189	1011	1216	1139	1568	466
2890	21	13	18	1796	1449	1803	1899	1375	1833	777	1131	958	1528	345
2891	22	17	20	1906	1393	1677	1702	1527	1976	748	963	838	1501	491
2892	19	9	11	1885	1552	1521	2031	1467	2092	733	1285	1203	1372	922
2893	15	11	12	2015	1272	1651	1888	1635	2002	731	1151	1095	1417	513
2894	6	10	8	2252	1442	1655	1935	1545	2165	937	1274	1072	1635	761
2895	7	4	4	2147	1458	1722	2044	1545	2196	1105	1357	1040	1292	629
2896	1	7	2	2140	1762	1852	2004	1733	2104	998	1474	1221	1241	656
2897	12	3	9	2131	1686	1798	2004	1550	1744	973	1335	1140	1254	614
2898	23	25	25	1760	565	1727	932	1744	2041	222	544	1493	932	122
2290				1977	1324	1984	1957	1731						
AVERAGE				2005	1346	1691	1799	1596	1944	806	1229	1151	1407	500

CI NO	OVERALL AVERAGE EARLY	LATE	TOTAL	MINOT EARLY	MORDEN EARLY	LATE	PORTAGE EARLY	LATE	WINNIPEG EARLY	SIDNEY EARLY	SASKATOON EARLY	STEPHEN EARLY
389	1325	1050	1242	1290	1466	1180	1389	1515	1707	946	512	1375
2292	1526	953	1354	1620	1234	978	1878	1220	1744	976	664	1463
2522	1506	1430	1483	1384	1750	1475	1970	1904	1515	1019	531	1595
2776	1513	1389	1476	1404	1494	1238	1948	2047	1454	1136	664	1505
2814	1538	948	1361	1451	1284	1301	2059	1299	1883	877	660	1753
2840	1446	1104	1343	1365	1261	1178	1939	1321	2017	903	639	1474
2847	1443	953	1296	1451	1148	1071	1863	1372	1874	913	612	1514
2851	1405	1008	1286	1523	1126	1109	1746	1086	1948	897	545	1644
2852	1302	1147	1256	1340	1239	1255	1448	1699	1454	996	601	1447
2853	1442	1155	1356	1614	1443	1351	1805	1489	1658	958	562	1420
2854	1432	1085	1328	1661	1337	1070	1764	1447	1805	872	587	1252
2855	1507	1159	1403	1684	1307	1129	1749	1216	2058	840	599	1541
2886	1450	1227	1383	1421	1292	1143	1801	1385	1805	892	612	1492
2887	1531	1551	1537	1412	1610	1271	1693	2129	1552	1114	597	1525
2888	1537	1429	1504	1199	1501	1220	2159	1951	1691	999	669	1532
2889	1481	1481	1481	1335	1558	1379	1981	2108	1421	1069	522	1308
2890	1385	1202	1330	1390	1254	1202	1580	1545	1744	934	638	1438
2891	1382	1130	1307	859	1377	1161	1771	1290	1821	907	665	1568
2892	1406	1361	1392	1109	1397	1243	1795	1685	1650	957	605	1348
2893	1445	1252	1387	1129	1292	1338	1697	1770	1813	1060	593	1682
2894	1525	1348	1472	1459	1587	1246	1909	1768	1744	888	626	1550
2895	1521	1432	1494	1558	1711	1361	1855	1997	1813	920	635	1514
2896	1544	1420	1507	1359	1478	1425	2114	1679	1727	911	593	1682
2897	1455	1453	1454	1447	1434	1474	1802	1968	1646	1014	524	1557
2898	1374	613	1145	1473	1075	871	1261	966	2258	722	676	1532
2290												1219
AVERAGE				1397	1386	1227	1799	1594	1752	949	605	1497

TABLE 5.—SUMMARY OF SEED YIELD IN PERCENT OF THE MEAN OF THE 4 CHECK VARIETIES DURING 1978

CI NO	OVERALL AVERAGE EARLY	OVERALL AVERAGE LATE	OVERALL AVERAGE TOTAL	LAMBERTON EARLY	LAMBERTON LATE	MORRIS EARLY	MORRIS LATE	CROOKSTON EARLY	BROOKINGS EARLY	BROOKINGS LATE	BROWN COUNTY EARLY	CARRINGTON EARLY	FARGO EARLY	FARGO LATE
389	90	87	89	102	62	89	87	97	89	108	71	88	77	81
2292	104	79	97	85	88	109	98	102	105	52	103	122	125	47
2522	103	119	107	106	132	105	110	92	98	119	127	91	96	126
2776	103	115	106	107	118	98	105	110	109	121	98	99	103	146
2814	105	79	98	107	71	113	89	112	103	51	110	104	78	37
2840	99	92	97	86	104	91	89	100	98	85	88	122	90	111
2847	98	79	93	99	82	100	71	103	97	74	101	108	77	76
2851	96	84	93	98	105	102	92	99	93	77	92	84	72	51
2852	89	95	90	103	99	93	81	94	89	90	94	80	54	107
2853	98	96	98	103	94	102	89	97	92	106	114	99	71	95
2854	98	90	96	102	88	98	100	92	104	80	74	98	102	95
2855	103	96	101	100	80	113	88	108	115	227	86	104	82	45
2886	99	102	100	94	125	111	104	112	99	89	88	95	89	141
2887	104	129	111	115	144	110	116	99	102	129	108	106	108	203
2888	105	119	108	103	124	111	119	110	112	119	124	89	90	155
2889	101	123	107	104	127	113	126	99	117	129	95	97	96	101
2890	94	100	96	90	113	112	105	87	98	99	88	81	94	75
2891	94	94	94	96	108	105	94	97	105	95	75	71	92	107
2892	96	113	100	95	121	95	112	93	111	93	100	102	84	200
2893	98	104	100	101	99	103	104	104	107	93	90	93	87	111
2894	104	112	106	113	112	103	107	98	115	119	99	91	100	165
2895	104	119	108	108	113	107	113	98	117	141	106	88	79	136
2896	105	118	109	108	137	115	110	110	112	127	115	104	76	142
2897	99	121	105	107	131	112	110	98	93	124	104	97	77	133
2898	94	51	82	89	44	108	51	111	109	28	42	127	57	26
2290				99	103	124	108	110						

CI NO	OVERALL AVERAGE EARLY	OVERALL AVERAGE LATE	OVERALL AVERAGE TOTAL	MINOT EARLY	MORDEN EARLY	MORDEN LATE	PORTAGE EARLY	PORTAGE LATE	WINNIPEG EARLY	SIDNEY EARLY	SASKATOON EARLY	STEPHEN EARLY
389	90	87	89	91	99	97	77	91	106	93	86	93
2292	104	79	97	114	83	80	105	73	109	96	112	99
2522	103	119	107	97	118	121	110	114	94	100	90	107
2776	103	115	106	99	101	102	108	122	91	111	112	101
2814	105	79	98	102	86	107	115	78	117	86	111	118
2840	99	92	97	96	85	97	108	79	126	89	108	99
2847	98	79	93	102	77	88	104	82	117	90	103	102
2851	96	84	93	107	76	91	97	65	121	88	92	111
2852	89	95	90	94	83	103	81	102	91	98	101	97
2853	98	96	98	113	97	111	100	89	103	94	95	96
2854	98	90	96	117	90	88	98	87	112	86	99	84
2855	103	96	101	118	88	93	97	73	128	82	101	104
2886	99	102	100	100	87	94	100	83	112	88	103	101
2887	104	129	111	99	108	104	94	127	97	109	101	103
2888	105	119	108	84	101	100	120	117	105	98	113	103
2889	101	123	107	94	105	113	110	126	89	105	88	88
2890	94	100	96	98	84	99	88	92	109	92	108	97
2891	94	94	94	60	93	95	99	77	113	89	112	106
2892	96	113	100	78	94	102	100	101	103	94	102	91
2893	98	104	100	79	87	110	94	106	113	104	100	113
2894	104	112	106	102	107	102	106	106	109	87	106	104
2895	104	119	108	109	115	112	103	119	113	90	107	102
2896	105	118	109	95	99	117	118	100	108	89	100	113
2897	99	121	105	102	97	121	100	118	103	99	88	105
2898	94	51	82	103	72	72	70	58	141	71	114	103
2290												82

TABLE 6.—STATE AVERAGES OVER 1 YEAR

	MINNESOTA			SOUTH DAKOTA			NORTH DAKOTA			MANITOBA			OTHERS			ALL STATIONS		
C1	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL
389	1591	1193	1458	1292	846	1143	1193	374	988	1520	1347	1451	729	0	729	1325	1050	1242
2292	1623	1449	1565	1644	408	1232	1697	216	1326	1618	1099	1410	820	0	820	1526	953	1354
2522	1706	1845	1752	1730	933	1464	1340	580	1150	1745	1689	1722	775	0	775	1506	1430	1483
2776	1735	1713	1727	1653	950	1419	1417	674	1231	1632	1642	1636	900	0	900	1513	1389	1476
2814	1865	1260	1663	1677	397	1250	1318	171	1031	1742	1300	1565	768	0	768	1538	948	1361
2840	1560	1473	1531	1489	668	1215	1423	511	1195	1739	1249	1543	771	0	771	1446	1104	1343
2847	1677	1174	1509	1555	577	1229	1327	352	1083	1628	1221	1465	762	0	762	1443	953	1296
2851	1701	1508	1637	1460	602	1174	1230	234	981	1606	1097	1403	721	0	721	1405	1008	1286
2852	1614	1368	1532	1436	702	1191	1057	493	916	1380	1477	1419	798	0	798	1302	1147	1256
2853	1657	1413	1576	1596	829	1340	1317	436	1096	1635	1420	1549	760	0	760	1442	1155	1356
2854	1579	1467	1542	1446	627	1173	1491	437	1227	1635	1258	1484	729	0	729	1432	1085	1328
2855	1758	1311	1609	1636	1781	1684	1416	209	1114	1704	1172	1491	719	0	719	1507	1159	1403
2886	1726	1741	1731	1499	700	1232	1332	652	1162	1632	1264	1485	752	0	752	1450	1227	1383
2887	1785	1980	1850	1653	1011	1439	1476	937	1341	1618	1700	1651	855	0	855	1531	1551	1537
2888	1772	1878	1807	1850	931	1544	1236	716	1106	1783	1585	1704	834	0	834	1537	1429	1504
2889	1684	1962	1777	1702	1011	1472	1347	466	1127	1653	1743	1689	795	0	795	1481	1481	1481
2890	1603	1674	1626	1482	777	1247	1292	345	1055	1526	1373	1465	786	0	786	1385	1202	1330
2891	1669	1547	1628	1469	748	1229	1066	491	922	1656	1225	1484	786	0	786	1382	1130	1307
2892	1555	1791	1634	1688	733	1370	1228	922	1151	1614	1464	1554	781	0	781	1406	1361	1392
2893	1745	1580	1690	1576	731	1294	1213	513	1038	1600	1554	1582	826	0	826	1445	1252	1387
2894	1750	1688	1729	1719	937	1458	1388	761	1231	1746	1507	1650	757	0	757	1525	1348	1472
2895	1732	1751	1738	1776	1105	1552	1296	629	1129	1793	1679	1747	777	0	777	1521	1432	1494
2896	1851	1883	1862	1789	998	1525	1273	656	1119	1773	1552	1684	752	0	752	1544	1420	1507
2897	1759	1845	1787	1539	973	1350	1280	614	1113	1627	1721	1664	769	0	769	1455	1453	1454
2898	1690	748	1376	1292	222	935	1299	122	1005	1531	918	1286	699	0	699	1374	613	1145

TABLE 7.—STATE AVERAGES OVER 2 YEARS

	MINNESOTA			SOUTH DAKOTA			NORTH DAKOTA			MANITOBA			OTHERS			ALL STATIONS		
C1	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL
389	1675	1226	1563	1371	494	995	952	724	902	1537	1428	1493	719	0	719	1331	1026	1242
2292	1763	1387	1669	1620	525	1150	1315	517	1137	1817	1508	1693	871	0	871	1554	1067	1411
2522	1822	1727	1798	1681	808	1307	1142	955	1101	1844	1813	1832	788	0	788	1536	1397	1495
2776	1912	1679	1854	1660	637	1222	1203	1013	1160	1805	1792	1800	838	0	838	1573	1345	1506
2814	1936	1197	1751	1603	522	1140	1179	179	957	1978	1786	1901	773	0	773	1596	1055	1437
2840	1781	1388	1683	1542	545	1115	1189	896	1124	1891	1507	1738	753	0	753	1522	1135	1408
2847	1796	1177	1642	1523	604	1129	1179	647	1061	1869	1575	1751	783	0	783	1520	1078	1390
2851	1807	1384	1701	1464	484	1044	1093	473	955	1851	1572	1739	743	0	743	1486	1070	1364
2852	1762	1329	1654	1544	532	1110	985	832	951	1681	1702	1689	769	0	769	1425	1171	1351
2853	1811	1350	1696	1551	604	1145	1081	814	1022	1782	1679	1741	726	0	726	1481	1184	1394
2854	1778	1381	1679	1522	641	1144	1219	852	1138	1835	1574	1731	734	0	734	1511	1172	1412
2855	1796	1161	1637	1506	969	1276	1140	423	980	1932	1552	1780	738	0	738	1516	1120	1400

TABLE 8.—STATE AVERAGES OVER 3 YEARS

	MINNESOTA			SOUTH DAKOTA			NORTH DAKOTA			MANITOBA			OTHERS			ALL STATIONS		
C1	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL	EARLY	LATE	ALL
389	1584	1226	1512	1220	494	948	1031	676	955	1533	1399	1479	1016	0	1016	1317	1039	1244
2292	1647	1387	1595	1430	525	1090	1291	401	1100	1811	1394	1644	1038	0	1038	1490	1020	1367
2522	1695	1727	1701	1490	808	1234	1160	843	1092	1786	1679	1743	939	0	939	1460	1347	1430
2776	1745	1679	1731	1474	637	1160	1222	890	1151	1782	1681	1742	906	0	906	1484	1313	1439
2814	1782	1197	1665	1394	522	1067	1235	224	1018	1920	1585	1786	911	0	911	1518	1023	1388
2840	1670	1388	1613	1360	545	1054	1271	717	1152	1847*	1462	1682*	896*	0	896*	1479*	1115	1380*
2847	1653	1177	1558	1336	604	1061	1188	497	1040	1844	1476	1697	1008	0	1008	1458	1046	1349

* Entries were not grown in the designated trials. Yield is computed for all trials where they were grown.

TABLE 9.—SUMMARY OF AGRONOMIC DATA OTHER THAN YIELD FOR VARIETIES OF FLAX GROWN IN THE COOPERATIVE REGIONAL TRIALS IN 1978

Variety or C.I. No.	Days to sowing to First Bloom Avg. (days)	First Bloom No. of tests	Full Bloom Avg. (days)	Full Bloom No. of tests	Maturity Avg. (days)	Maturity No. of tests	Height Avg. (cm)	Height No. of tests	Lodging[1/] Avg.	Lodging[1/] No. of tests
Bison	45	9	54	6	104	7	62	18	3.8	5
Nored	49	9	56	6	108	7	64	18	1.8	5
Linott	44	9	51	6	104	7	59	18	2.6	5
Culbert	44	9	51	6	105	7	58	18	2.0	5
Dufferin	50	9	58	6	108	7	63	18	3.0	5
2840	48	9	56	6	106	7	64	18	1.8	5
2847	46	9	54	6	107	7	62	18	1.8	5
2851	48	9	56	6	106	7	64	18	2.2	5
2852	47	9	54	6	104	7	56	18	3.0	5
2853	45	9	52	6	106	7	61	18	2.0	5
2854	46	9	54	6	108	7	62	18	1.8	5
2855	47	9	56	6	108	7	63	18	2.6	5
2886	45	9	52	6	105	7	64	18	2.4	5
2887	43	9	50	6	101	7	59	18	3.2	5
2888	44	9	51	6	103	7	61	18	2.0	5
2889	42	9	49	6	102	7	55	18	1.8	5
2890	45	9	54	6	106	7	65	18	1.8	5
2891	45	9	54	6	108	7	65	18	2.2	5
2892	45	9	52	6	104	7	61	18	2.0	5
2893	45	9	52	6	104	7	60	18	2.2	5
2894	45	9	52	6	103	7	58	18	3.0	5
2895	45	9	52	6	104	7	58	18	2.0	5
2896	46	9	52	6	103	7	56	18	2.8	5
2897	44	9	52	6	102	7	58	18	3.0	5
2898	52	9	59	6	109	7	66	18	2.8	5

1/ Rated on a scale; 1 = best, 9 = poorest.

TABLE 10.—SUMMARY OF RESISTANCE TO FUSARIUM WILT FOR VARIETIES GROWN IN COOPERATIVE REGIONAL TRIALS IN 1978 AND A 2- AND 3-YEAR MEAN

Variety or C.I. No.	1978 St.Paul MN	1978 Fargo ND	1978 Morden Man.	Two-year mean St.Paul MN	Two-year mean Fargo ND	Two-year mean Morden Man.	Three-year mean St.Paul MN	Three-year mean Fargo ND
Bison	3	4	2	4	4	2	4	4
Nored	2	2	1	2	2	2	2	2
Linott	6	5	3	7	6	4	7	6
Culbert	2	5	3	2	5	4	1	5
Dufferin	2	2	1	2	2	2	2	2
2840	3	4	3	5	5	3	5	5
2847	2	4	1	4	2	2	6	4
2851	2	2	1	3	3	2		
2852	2	2	3	3	2	3		
2853	2	3	1	2	3	2		
2854	3	5	6	6	5	5		
2855	3	3	1	6	3	1		
2886	2	5	2					
2887	3	5	3					
2888	2	4	3					
2889	2	4	3					
2890	2	3	2					
2891	1	3	2					
2892	2	2	3					
2893	1	4	2					
2894	6	6	2					
2895	6	5	2					
2896	5	6	2					
2897	6	5	3					
2898	3	4	1					

TABLE 11.—SUMMARY OF OIL PERCENTAGES OF FLAXSEED ENTRIES IN THE 1978 REGIONAL TRIALS, 2- AND 3-YEAR MEAN

Variety or C. I. No.	Lamberton (E)	Morris (E)	Brookings (E)	Morden (E)	Morden (L)	Portage (E)	Portage (L)	Fargo (E)	Sidney (E)	Mean % 9 locations	Two-year mean	Three-year mean
Bison	42.5	44.4	43.8	43.0	43.5	44.5	42.9	43.5	38.5	43.0	42.2	41.0
Nored	42.9	44.4	43.8	44.1	43.3	45.3	43.8	44.0	38.9	43.4	42.7	41.7
Linott	43.5	44.2	44.8	44.9	43.4	44.5	44.2	44.0	39.0	43.6	43.0	41.8
Culbert	43.3	44.2	45.5	44.6	44.5	45.9	44.1	45.0	40.0	44.1	43.1	42.1
Dufferin	44.7	44.6	45.9	45.1	45.5	46.2	44.1	45.1	38.9	44.5	43.7	42.4
2840	43.1	42.5	43.6	44.3	42.5	45.2	42.4	43.7	38.3	42.8	41.9	40.7
2847	43.7	43.4	45.4	45.2	44.4	44.9	42.3	43.6	38.3	43.5	42.8	41.6
2851	44.2	44.5	45.0	45.6	43.5	45.6	43.4	43.3	39.2	43.8	43.1	
2852	43.0	44.5	44.5	44.0	43.0	45.1	43.6	42.0	38.9	43.2	42.5	
2853	42.2	43.3	43.3	44.7	42.2	44.6	42.4	44.1	38.8	42.8	42.2	
2854	44.2	44.7	45.7	45.8	44.9	46.1	43.7	44.8	38.7	44.3	43.2	
2855	42.9	44.7	45.9	44.7	44.1	45.5	42.5	43.3	38.5	43.6	42.6	
2886	42.3	42.4	44.6	44.4	43.4	45.5	43.8	42.8	38.1	43.0		
2887	42.8	43.2	44.4	44.6	44.1	44.8	44.6	43.0	38.3	43.3		
2888	42.1	42.6	44.1	43.2	43.8	43.2	42.8	42.6	38.6	42.6		
2889	42.7	44.3	44.2	44.5	44.9	45.7	44.4	43.4	39.2	43.7		
2890	46.7	46.4	47.3	47.3	46.3	48.1	46.6	46.6	40.0	46.1		
2891	46.6	46.5	47.7	47.8	47.2	48.3	47.9	46.0	40.7	46.5		
2892	44.9	45.9	47.3	46.8	47.9	48.0	46.8	44.5	40.0	45.8		
2893	44.4	46.0	45.9	45.9	46.4	46.8	45.8	45.0	39.9	45.1		
2894	43.0	44.1	46.1	44.9	44.6	45.9	45.0	43.9	39.0	44.1		
2895	43.1	43.9	45.5	44.6	45.2	44.9	44.4	44.4	39.0	43.9		
2896	43.3	44.3	44.4	44.3	44.2	45.5	44.4	43.9	38.2	43.6		
2897	43.4	43.3	45.1	43.8	44.3	45.4	44.1	43.6	39.2	43.6		
2898	43.5	43.5	44.3	44.1	45.0	45.6	43.1	42.8	38.2	43.3		

TABLE 12.—SUMMARY OF IODINE VALUES FOR FLAXSEED PRODUCED IN EACH STATE IN THE 1978 REGIONAL TRIALS

Variety or C.I. No.	Fargo, ND (Early)	Morris, MN (Early)	Brookings, SD (Early)	Morden, Manitoba (Early)
Bison	164	176	171	182
Nored	184	182	184	189
Linott	175	181	180	188
Culbert	186	188	184	195
Dufferin	176	183	176	186
2840	181	184	179	191
2847	171	181	179	187
2851	168	181	170	181
2852	170	178	182	184
2853	173	180	171	182
2854	179	177	180	188
2855	169	177	177	179
2886	175	179	180	191
2887	180	178	181	189
2888	170	182	179	185
2889	177	178	180	188
2890	180	181	171	188
2891	181	168	178	185
2892	177	182	182	191
2893	174	181	174	186
2894	176	178	180	187
2895	173	174	171	183
2896	177	181	175	186
2897	170	179	174	185
2898	170	173	174	181
Culbert 79	185			
Wishek	178			

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2000 WEST PIONEER PARKWAY
PEORIA, ILLINOIS 61615